

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 07-060955  
(43)Date of publication of application : 07.03.1995

(51)Int.Cl. B41J 2/01  
B41J 2/175

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(22)Date of filing : 30.08.1993 (72)Inventor : ASAI AKIRA

## (54) INK JET RECORDING HEAD AND INK JET RECORDER EQUIPPED WITH THE RECORDING HEAD

$$i(r) = \frac{I}{\theta \cdot r \cdot d(r)}$$

$$q(r) = i(r)^2 \cdot \rho \cdot d(r)$$

$$q(r) = \frac{I^2 \cdot \rho}{\theta^2 \cdot r^2 \cdot d(r)}$$

(57)Abstract:

PURPOSE: To obtain a recording head having a novel heating element wherein heating distribution on a surface of a resistor is equalized and its recorder by a method wherein a heating resistor has a heating part of an approximately circularly annular or fan-like annular surface shape, and its thickness is varied inversely proportional to a distance in a radial direction from a central point of the surface shape.

CONSTITUTION: When voltage is impressed by making a current (I) flow radially along a radial direction of a heating resistor, a thickness d (r) of a heating part of the heating resistor is varied inversely proportional to a radial distance (r) from a center of a surface shape. Thereby, a current density i (r) at any point on the heating part at a radial distance (r) apart from the center comes to be as given by the formula (I). In the formula  $\theta$  is an angle of a fan-like annulus ( $2\pi$  in

the case of a circular annulus). Relation between the resistivity ( $\rho$ ) of the resistor and a heating value q (r) per unit time unit area is as given by the formula II. Therefore, the formula III is obtained.

## LEGAL STATUS

[Date of request for examination] 30.06.1999  
[Patent number] 3157964  
[Date of registration] 09.02.2001